

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-26 (canceled).

27. (Previously presented) A method of manufacturing a belt material for a tire comprising the steps of:

providing a drum having a predetermined outer diameter;

spirally winding a ribbon formed of a plurality of cords arranged longitudinally and covered with a rubber coating around an outer peripheral surface of said drum at a predetermined pitch, and sticking side edges of the wound ribbon to each other to form a cylindrical wound body;

spirally cutting said wound body at a predetermined pitch larger than the winding pitch of said ribbon to form a belt material having a predetermined width and a cord inclination angle;

peeling the belt material from said drum;

transferring the belt material peeled from the drum to a tray; and

transporting said tray in a transporting direction intersecting an axial line of the drum, wherein said tray is carried on a turntable, which is pivotally supported on a moving table, the moving table being movable in the transporting direction, wherein, with the turntable inclined by

a predetermined angle with respect to the transporting direction, the belt material peeled from the drum is transferred to the tray.

28. (Canceled)

29. (Previously presented) The method of manufacturing a belt material for a tire according to claim 27, wherein the outer diameter of said drum, a width, winding pitch, number of windings of the ribbon, and the cutting pitch of the wound body are set based on a length, width and cord inclination angle of the intended belt material.

30. (Previously presented) The method of manufacturing a belt material for a tire according to claim 29, wherein the length of the belt material is set to a dimension used for a single tire.

31. (Previously presented) A device for manufacturing a belt material for a tire, comprising:

a ribbon winding mechanism for spirally winding a ribbon formed of a plurality of cords arranged longitudinally and coated with a rubber around an outer peripheral surface of a drum at a predetermined pitch;

a sticking mechanism for sticking side edges of the wound ribbon to each other to form a wound body;

a wound body cutting mechanism for spirally cutting said wound body at a predetermined pitch larger than the winding pitch of said ribbon to form a belt material having a predetermined width and a cord inclination angle;

a belt material peeling mechanism for peeling the belt material from said drum;

a tray for receiving the belt material peeled from the drum; and

a tray transportation mechanism for transporting said tray in a direction intersecting an axial line of the drum, wherein the tray transportation mechanism includes a moving table, which is movable in the direction intersecting the axial line of the drum, and a turntable, which is pivotally supported on the moving table, said tray being carried on the turntable.

32. (Canceled)

33. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said ribbon winding mechanism is comprised of a ribbon winding guide corresponding to the drum rotatably supported by a frame, and a relative movement mechanism for relatively moving said drum and said ribbon winding guide in an axial direction of the drum at a predetermined feed speed.

34. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said sticking mechanism is configured to stick the side edges of the ribbon

with a pressure by a press-roller which follows a ribbon winding operation by said ribbon winding mechanism.

35. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said drum is provided with a winding start end grabbing mechanism capable of grabbing a winding start end of the ribbon.

36. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, further comprising a ribbon cutting mechanism for cutting a finish end of the ribbon wound around the drum.

37. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said wound body cutting mechanism comprises a cutter for cutting the wound body, and a movement mechanism for moving the cutter, said cutter being disposed corresponding to said drum for movements into contact with and away from the drum, and the movement mechanism rotating said drum and moving said cutter in a longitudinal direction of the drum at a predetermined feed speed.

38. (Previously presented) The device for manufacturing a belt material for a tire according to claim 37, wherein said drum is provided with a spiral blade groove in said outer peripheral

surface at the same pitch as said cutting pitch, wherein a blade edge of said cutter is guided along one edge of said blade groove to cut the wound body.

39. (Canceled)

40. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, further comprising a transfer mechanism for pressing the belt material peeled from the drum onto a top surface of said tray with a predetermined pressure.

41. (Previously presented) The device for manufacturing a belt material for a tire according to claim 40, wherein said drum is provided with a spiral blade groove in said outer peripheral surface at the same pitch as said cutting pitch, wherein said tray is formed in the shape of rectangle, said tray is disposed so as to match the spiral lead angle of the spiral blade groove, and said tray is moved in the transporting direction in synchronism with an operation for peeling off the belt material from the rotating drum to transfer the belt material onto the tray.

42. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, further comprising an edge tape winding mechanism for winding an edge tape on the outer peripheral surface of the wound body formed on said drum, along a scheduled spiral cutting line by the wound body cutting mechanism so as to straddle the scheduled line.

43. (Previously presented) The device for manufacturing a belt material for a tire according to claim 42, wherein out of two processes for manufacturing a wider belt material of a width and a narrower belt material of a width, said edge tape winding mechanism is configured to wind the edge tape along a scheduled spiral cutting line for a wound body for forming the wider belt material.

44. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said ribbon winding mechanism is configured to be capable of spirally winding the ribbon around the drum in opposite directions, and said wound body cutting mechanism is configured to be capable of spirally cutting the wound body in opposite directions.

45. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said drum is one of a plurality of drums that are disposed at a plurality of locations, and each of said drums is configured to be switchable among a ribbon winding position, a ribbon sticking position, a wound body cutting position, and a belt material peeling/extracting position by a position switching mechanism.

46. (Previously presented) The device for manufacturing a belt material for a tire according to claim 45, wherein said drums are two drums, and ribbons are wound around the two drums in directions opposite to each other and wound bodies on the two drums are each spirally cut in

directions opposite to each other such that cord inclination angles of the linear cords of the belt materials obtained from the two drums are substantially symmetric.

47. (Previously presented) The device for manufacturing a belt material for a tire according to claim 46, wherein said two drums have different outer diameters and are formed with spiral blade grooves extending in directions opposite to each other in said outer peripheral surfaces, said position switching mechanism is a drum reversing/supporting mechanism for rotatably supporting said two drums and for alternately reversing said drums to two positions,

wherein a ribbon is wound around the outer periphery of the drum arranged at one position by the drum reversing/supporting mechanism to form a wound body, and

said wound body on the outer periphery of the drum arranged at the other position by said drum reversing/supporting mechanism is cut along the blade groove of the drum to form a belt material.

48. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said drum is provided with a spiral blade groove in said outer peripheral surface at the same pitch as said cutting pitch, wherein said wound body cutting mechanism is provided with a cutter for engagement with the blade groove of the drum to press a blade edge of the cutter to an edge of the blade groove.

49. (Canceled)

50. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, wherein said turntable is configured to be pivoted to a first inclined position inclined by a predetermined angle to one side with respect to a direction in which the moving table is moved, a second inclined position inclined by a predetermined angle to the other side with respect to the moving direction, and a transporting direction position extending along the moving direction.

51. (Previously presented) The device for manufacturing a belt material for a tire according to claim 31, comprising clamp means on the turntable for removably clamping the tray.

52. (Canceled)

53. (Canceled)

54. (Previously presented) A device for manufacturing a belt material for a tire comprising:

a ribbon winding mechanism for spirally winding a ribbon formed of a plurality of cords arranged longitudinally and covered with a rubber coating around an outer peripheral surface of a drum having a predetermined outer diameter at a predetermined pitch;

a sticking mechanism for sticking side edges of the wound ribbon to each other to form a cylindrical wound body;

a wound body cutting mechanism for spirally cutting said wound body at a predetermined pitch larger than the winding pitch of said ribbon to form a belt material having a predetermined width and a cord inclination angle;

a peeling shaft for peeling the belt material from said drum, said peeling shaft being capable of approaching and separating away from said drum;

a tray for receiving the belt material peeled from the drum;

a rotatable press-roller for pressing the belt material peeled from the drum onto the tray;

and

a tray transportation mechanism for transporting said tray in a direction intersecting an axial line of the drum while the belt material is pressed onto the tray by the press-roller.

55. (Canceled)

56. (Currently amended) A method of manufacturing a belt material for a tire comprising the steps of:

alternately reversing first and second drums to first and second locations, the first and second drums having different outer diameters;

spirally winding a ribbon, which is formed of a plurality of cords arranged longitudinally and covered with a rubber coating, around an outer peripheral surface of the first drum arranged at the first location at a predetermined pitch, and sticking side edges of the wound ribbon to each other to form a first cylindrical wound body around said first drum;

spirally cutting said first wound body on the first drum arranged at the second location at a predetermined first pitch larger than the winding pitch of said ribbon to form a first belt material having a predetermined first width and a cord inclination angle;

spirally winding the ribbon around the second drum arranged at the first location to form a second wound body when said first wound body on the first drum arranged at the second location is being spirally cut; and

spirally cutting said second wound body on the second drum arranged at the second location to form a second belt material when the ribbon is being spirally wound around the first drum arranged at the first location, the second wound body being spirally cut at a predetermined second pitch different from the predetermined first pitch so that the second belt material has a predetermined second width different from the predetermined first width,

wherein the ribbons are wound around the first and second drums in directions opposite to each other and the first and second wound bodies on the drums are each spirally cut in directions opposite to each other such that cord inclination angles of the linear cords of the first and second belt materials obtained from the drums are substantially symmetric.